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ASPRE trial: effects of aspirin on serum PAPP-A and PlGF trajectories in pregnancy

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Objective

The effects of aspirin on serum pre-eclampsia (PE) biomarkers are unclear. We aimed to investigate the effects of aspirin treatment on pregnancy-associated plasma protein A (PAPP-A) placental growth factor (PlGF) using repeated measures from women at increased risk of preterm PE.

Methods

This was a longitudinal secondary analysis of the Combined Multimarker Screening and Randomized Patient Treatment with Aspirin for Evidence-based Preeclampsia Prevention (ASPRE) trial using repeated PAPP-A and PlGF measures. In the trial, 1620 women at increased risk of preterm PE were identified using the FMF algorithm at 11-13^{+6} weeks, of whom 798 were randomly assigned to receive aspirin 150 mg and 822 to receive placebo daily from before 14 weeks to 36 weeks' gestation. PAPP-A and PlGF were measured at baseline and follow-up visits at 19-24, 32-34, and 36 weeks' gestation. Generalized additive mixed models with treatment by gestational age interaction terms were used to investigate the effect of aspirin on PAPP-A and PlGF trajectories over time.

Results

Among 798 participants in the aspirin group and 822 in the placebo group, there were 4779 PAPP-A and 4795 PlGF measurements in total. Aspirin treatment did not significantly affect PAPP-A and PlGF raw or multiples of the median (MoM) values, resulting in similar trajectories in the aspirin and placebo groups (p-values for treatment by gestational age interaction: 0.74 for PAPP-A and 0.66 for PlGF).

Conclusion

In women at increased risk of preterm PE, aspirin 150 mg daily from the first trimester does not modify PAPP-A or PlGF trajectories during pregnancy.